



**Echelon Corporation
Package Qualification Report**

RoHS Compliant FTT-10A

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Component-Level Tests

FTT-10A

Test	Conditions	Sample Size	Results
HALT	85°C, 85% R.H. 1000 hours	240	0 failures
HASS	-50 to +95°C 10°C/minute 59-minute dwells 50 hours	60	0 failures
Tin Whiskers	N/A. (Leads are dipped in tin, which sits on a barrier layer of nickel. Tin whiskers are a concern for electroplated tin, not dipped tin.)		

Second-Level Interconnect Tests

*FTT-10A**

Test	Conditions	Sample Size	Results
HALT	85°C, 85% R.H. 1000 hours	24	0 failures
HASS	-50 to +95°C 10°C/minute 59-minute dwells 50 hours	20	0 failures
Second-Level Interconnect Temperature Cycling	0 to +90°C 1.45 cycles/hour 5-minute dwells 1000 cycles with Sn-Ag-Cu Solder	40	0 failures found: -Functional test -Cross-sections**
Second-Level Interconnect Temperature Cycling (for backward compatibility in non-RoHS processes)	0 to +90°C 1.45 cycles/hour 5-minute dwells 1000 cycles with Sn-Pb Solder	5	0 failures found: -Functional test -Cross-sections**

*Testing was performed on a product similar to the FTT-10A in construction and materials. The similarity allows the data to be shared between the two products.

**Results based on a sampling of the total units tested.